November 18, 2013

Mr. Todd Brichacek
Senior Vice President-Site Manager
Solvay Chemicals, Inc.
PO Box 1167
Green River, WY 82935

Permit No. **MD-13083**

Dear Mr. Brichacek:

The Division of Air Quality of the Wyoming Department of Environmental Quality has completed final review of Solvay Chemicals, Incorporated's application to modify operations at the Green River Soda Ash Plant with the installation of a 254 million British thermal unit per hour (MMBtu/hr) natural gas fired package boiler to provide steam and heat to the facilities production processes. Solvay also proposes to install a clear liquor heat exchanger and make other minor operational and equipment changes to debottleneck production. The Green River Soda Ash Plant, in the NE1/4 of Section 31, T18N, R109W, approximately twenty (20) miles west of Green River, in Sweetwater County, Wyoming.

Following this agency's proposed approval of the request as published October 16, 2013 and in accordance with Chapter 6, Section 2(m) of the Wyoming Air Quality Standards and Regulations, the public was afforded a 30-day period in which to submit comments concerning the proposed modification, and an opportunity for a public hearing. No comments have been received. Therefore, on the basis of the information provided to us, approval to modify the Green River Soda Ash Plant as described in the application is hereby granted pursuant to Chapter 6, Section 2 and 4 of the regulations with the following conditions:

1. That authorized representatives of the Division of Air Quality be given permission to enter and inspect any property, premise or place on or at which an air pollution source is located or is being constructed or installed for the purpose of investigating actual or potential sources of air pollution and for determining compliance or non-compliance with any rules, standards, permits or orders.

2. That all substantive commitments and descriptions set forth in the application for this permit, unless superseded by a specific condition of this permit, are incorporated herein by this reference and are enforceable as conditions of this permit.

3. That Solvay Chemicals, Inc. shall file a complete application to modify their Operating Permit within twelve (12) months of commencing operation, in accordance with Chapter 6, Section 3(c)(i)(B) of the WAQSR.

4. That all notifications, reports and correspondence required by this permit shall be submitted to the Stationary Source Compliance Program Manager at 122 West 25th Street, Cheyenne, WY 82002 and a copy shall be submitted to the District Engineer, Air Quality Division, 510 Meadowview Drive, Lander, WY 82520.

5. That written notification of the anticipated date of initial startup, in accordance with Chapter 6, Section 2(i) of the WAQSR, is required not more than 60 days or less than 30 days prior to such date. Notification of the actual date of startup of the 254 MMBtu/hr natural gas boiler (109) is required within 15 days after startup.

6. That the date of commencement of construction shall be reported to the Administrator within 30 days of commencement. In accordance with Chapter 6, Section 2(h) of the WAQSR, approval to construct or modify shall become invalid if construction is not commenced within 24 months after receipt of such approval or if construction is discontinued for a period of 24 months or more. The Administrator may extend the period based on satisfactory justification of the requested extension.

7. That performance tests be conducted, in accordance with Chapter 6, Section 2(j) of the WAQSR, within 30 days of achieving a maximum design rate but not later than 90 days following initial startup, and a written report of the results be submitted. The operator shall provide 15 days prior notice of the test date. If a maximum design rate is not achieved within 90 days of startup, the Administrator may require testing be done at the rate achieved and again when a maximum rate is achieved.

8. Initial performance testing, as required by Condition 7 of this permit, shall be conducted on the following sources:

   i. 254 MMBtu/hr Natural Gas Boiler (109):

NO_x Emissions:	Testing is to be performed on a 30-day rolling average using a certified CEM.
CO Emissions:	Testing is to be performed on a 30-day rolling average using a certified CEM.
PM Emissions:	Testing shall consist of three (3) 1-hour tests following EPA Reference Methods 1-4, 5 and 202. Testing is to verify the emissions are as represented in the application.
VOC Emissions:	Testing shall consist of three (3) 1-hour tests following EPA Reference Methods 1-4 and 25 or an equivalent EPA reference method upon Division approval. Testing is to verify the emissions are as represented in the application.

   A test protocol shall be submitted for review and approval prior to testing. Notification of the test date shall be provided to the Division fifteen (15) days prior to testing. Results shall be submitted to the Division within 45 days of completing the tests.

9. Effective on and after the date on which the performance test is conducted, as required by Condition 7 of this permit, emissions from the 254 MMBtu/hr Natural Gas Boiler (109) equipped with low NO_x burners and flue gas recirculation shall be limited to the rates in the table below. These limits shall apply during all operating periods.

Pollutant	lb/MMBtu	lb/hr	tpy
NO_x	0.011 (30-day Rolling Average)	2.8 (30-day Rolling Average)	12.2
CO	0.037 (30-day Rolling Average)	9.4 (30-day Rolling Average)	41.2

10. Solvay Chemicals, Inc. shall use the following in-stack continuous emission monitoring (CEM) equipment on the 254 MMBtu/hr Natural Gas Boiler (109) to demonstrate continuous compliance with the emission limits set forth in this permit:

i. Solvay Chemicals, Inc. shall install, calibrate, operate, and maintain a monitoring system, and record the output, for measuring NO_x emissions discharged to the atmosphere in ppm_v, lb/MMBtu and lb/hr. The NO_x monitoring system shall consist of the following:

a. A continuous emission NO_x monitor located in the boiler exhaust stack.

b. A continuous flow monitoring system for measuring the flow of exhaust gases discharged into the atmosphere.

c. A continuous oxygen or carbon dioxide monitor at the location NO_x emissions are monitored.

ii. Solvay Chemicals, Inc. shall install, calibrate, operate, and maintain a monitoring system, and record the output, for measuring CO emissions discharged to the atmosphere in ppm_v, lb/MMBtu and lb/hr. The CO monitoring system shall consist of the following:

a. A continuous emission CO monitor located in the boiler exhaust stack.

b. A continuous flow monitoring system for measuring the flow of exhaust gases discharged into the atmosphere.

c. A continuous oxygen or carbon dioxide monitor at the location CO emissions are monitored.

iii. Each continuous monitor system listed in this condition shall comply with the following:

a. Monitoring requirements of Chapter 5, Section 2(j) of the WAQSR including the following:

1. 40 CFR part 60, Appendix B, Performance Specification 2 for NO_x and SO_2, Performance Specification 4 for CO, and Performance Specification 3 for O_2 and CO_2. The monitoring systems must demonstrate linearity in accordance with Division requirements.

2. Quality Assurance requirements of Appendix F, 40 CFR part 60 unless otherwise specified in an applicable subpart or by the Administrator.

3. Solvay Chemicals, Inc. shall develop and submit for the Division's approval a Quality Assurance plan for the monitoring systems listed in this condition within 90 days of initial startup.

11. Following the initial performance tests, as required by Condition 7 of this permit, compliance with the limits set forth in this permit shall be determined with data from the continuous monitoring systems required by Condition 10 of this permit as follows:

i. Exceedance of the limits shall be defined as follows:

a. Any 30-day rolling average which exceeds the lb/MMBtu NO_x or CO limit as calculated using the following formula:

$$E_{avg} = \frac{\sum_{h=1}^{n} (C)_h}{n}$$

Where:

E_{avg} = 30-day rolling average emission rate (lb/MMBtu).

C = 1-hour average NO_x or CO emission rate (lb/MMBtu) for hour "h" calculated using valid data (output concentration and average hourly volumetric flowrate or average hourly fuel flow) from the CEM equipment required by Condition 10. Valid data shall meet the requirements of WAQSR, Chapter 5, Section 2(j).

n = The number of unit operating hours in the last 30 successive boiler operating days with valid emissions data meeting the requirements of WAQSR, Chapter 5, Section 2(j). A "boiler operating day" shall be defined as any 24-hour period between 12:00 midnight and the following midnight during which fuel is combusted at any time in the boiler.

b. Any 30-day rolling average which exceeds the lb/hr NO_x or CO limit as calculated using the following formula:

$$E_{avg} = \frac{\sum_{h=1}^{n}(C)_h}{n}$$

Where:

E_{avg} = 30-day rolling average emission rate (lb/hr).

C = 1-hour average NO_x or CO emission rate (lb/hr) for hour "h" calculated using valid data (output concentration and average hourly volumetric flowrate or average hourly fuel flow) from the CEM equipment required by Condition 10. Valid data shall meet the requirements of WAQSR, Chapter 5, Section 2(j).

n = The number of unit operating hours in the last 30 successive boiler operating days with valid emissions data meeting the requirements of WAQSR, Chapter 5, Section 2(j). A "boiler operating day" shall be defined as any 24-hour period between 12:00 midnight and the following midnight during which fuel is combusted at any time in the boiler.

ii. Solvay Chemicals, Inc. shall comply with all reporting and record keeping requirements as specified in Chapter 5, Section 2(g) of the WAQSR. Excess NO_x and CO emissions shall be reported in units of ppm_v, lb/MMBtu, and lb/hr.

12. That the opacity from the 254 MMBtu/hr Natural Gas Boiler (109) shall be limited to no greater than twenty percent (20%) as determined by Method 9 of 40 CFR part 60, appendix A.

13. That the 254 MMBtu/hr Natural Gas Boiler (109) shall be limited to pipeline quality natural gas as a fuel in order to ensure SO_2 and particulate matter emissions are no greater than as represented in the application for this permit.

14. That Solvay Chemicals, Inc. shall comply with all of the applicable requirements of 40 CFR part 60, subpart Db for the 254 MMBtu/hr Natural Gas Boiler (109).

15. That Solvay Chemicals, Inc. shall comply with all of the applicable requirements of 40 CFR part 63, subpart DDDDD for the 254 MMBtu/hr Natural Gas Boiler (109).

16. That Solvay Chemicals, Inc. shall obtain an issued GHG permit from EPA Region 8, or if the State has been granted primacy (approved SIP for GHG) a State issued GHG permit, prior to start of construction under this permit.

It must be noted that this approval does not relieve you of your obligation to comply with all applicable county, state, and federal standards, regulations or ordinances. Special attention must be given to Chapter 6, Section 2 of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with Condition 5, 6 and 7. Attention must also be given to Chapter 6, Section 3 (major sources) of the Wyoming Air Quality Standards and Regulations, which details the requirements for compliance with Condition 3. Any appeal of this permit as a final action of the Department must be made to the Environmental Quality Council within sixty (60) days of permit issuance per Section 16, Chapter I, General Rules of Practice and Procedure, Department of Environmental Quality.

If we may be of further assistance to you, please feel free to contact this office.

Sincerely,

Steven A. Dietrich
Administrator
Air Quality Division

Todd Parfitt
Director
Dept. of Environmental Quality

cc: Tony Hoyt